cannot now be employed in that sense. In English usage, 'candle-power' is strictly a form of power, and might, if we had the data, be defined in ergs per second. In French, an electric current cannot be strictly expressed in amperes, but the *intensité* of a current can be so stated. In English, the notion of *intensité* is here redundant, and, as the reviewer observes, "In scientific English the word 'intensity' always connotes something analogous to 'energy per unit area.'"

A good deal might be said about the proper use of the term 'flux,' when 'luminous flux' is to be substituted for 'light.' Flux is generally employed in English to connote a flow, not a rate. 'Luminous radiation' is all that is wanted, without introducing the conception of a rate. Need we stop to consider, or wait to know what light is before using the word in scientific English? Heat is not easy to define, temperature is less easy, but no new terms are wanted here.

A. P. TROTTER.

Teffont, Salisbury,
October 30.

I AM very glad to find Mr. Trotter in agreement with me regarding some points in photometric nomenclature, but in reply to his concluding remarks I have only to suggest that the scientific use of the term 'light' should be at least as exact and simple as its ordinary use in English. Terms like 'ultra-violet light' are simply ridiculous. That is why I suggested a greater care in the use of the word. Why manufacture new terms because a very small proportion of the population misuses the good old words?

L. C. M.

Broadcasting Birth-control.

SIR JAMES MARCHANT, in a letter published in the *Times* of November 17, refers to my "extreme and one-sided views" on the subject of birth-control. As there appears to be much misconception in regard to what I actually did say on this subject during the broadcast debate on "Is Science Bad for the World?" on November 16, I should like to have the opportunity of putting my words on record. They were as follows:

"Birth-control is capable of great harm, if it is not regulated; but its absence would lead to greater harm. It therefore must be regulated and supervised by the State" (or, I would now add, by the medical profession), "and the nation should allow no interference on the part of prudery or of religious intolerance. . . ." Here I was interrupted.

I claim that this statement was neither extreme nor one-sided. Whether subjects like 'birth-control' should ever be mentioned on the wireless is another issue altogether. To me personally, letters such as that of Sir James Marchant appear to add point to the fear which has been expressed that State control of broadcasting might well tend to dulness and sterility through a banning of all controversial matters. Had broadcasting been possible in 1859, doubtless no expression of opinion would have been allowed over the wireless on the shocking question of whether man had not been specially created, but had evolved from animals.

However, I am here only concerned to defend myself from the imputation of having abused my privileged position at the microphone. I should also add that a year ago I was invited to give a series of wireless talks on biology and human life, and that no objection was then raised by the B.B.C. to the brief references to birth-control which I there made. I therefore conclude (and earnestly hope that I am correct) that though the policy of the B.B.C. may be against the raising of the question in a controversial way in debate, this does not preclude the topic from ever being mentioned over the wireless.

JULIAN S. HUXLEY.

King's College,
Strand, London, W.C.2.

Spectrographic Junction between the X-ray Region and the Extreme Ultra-violet.

IN a letter published in NATURE of October 16, p. 551, Dr. A. Dauvillier has announced some preliminary results of attempts to get spectroscopic evidence of the unknown region between the X-rays and the extreme ultra-violet. He has followed the same general methods and technique as have been used by me in measuring the K- and L-series of the formerly unknown domain of wave-lengths 12 Å.U.-25 Å.U. (*Phil. Mag.*, February 1926).

My experience from this work is that a thorough critical scrutiny of the obtained spectrograms is necessary to exclude erroneous interpretations. To show that the lines found were not ordinary short wave-lengths reflected in higher orders or in other atomic planes than those supposed, Dr. Dauvillier has used goldbeater's foil. Our experience is that such foils, even of the thinnest obtainable sort, absorb completely all wave-lengths greater than 13 Å.U.-15 Å.U., and therefore it is scarcely possible by this means to identify the longer wave-lengths.

It is also surprising that a foil of magnesium thick enough to prevent the photographic plate from fogging by the rather intense ordinary light would transmit this very soft radiation in any considerable amount, especially when the relatively small intensity of the N- and O-series, as also theoretically suggested by Kramers, is taken into account.

It will, however, be of great interest to get a detailed report of these experiments, which, if they prove to be correctly interpreted, are of high scientific value.

ROBERT THORÆUS.

Physical Laboratory of the University,
Upsala, Sweden, October 29.

Quantum Theory and Intensity Distribution in Continuous Spectra.

THE undulatory mechanics makes it possible to give a quantum theory of aperiodic phenomena, and, in particular, to compute the intensity distribution for continuous spectra. The theory has recently been applied to the hyperbolic orbits of the hydrogen atom (*Proc. Camb. Phil. Soc.*, Oct. 1926). The results are too complicated to be given here in detail; but they yield an estimate of the intensity distribution in the continuous X-ray absorption spectra. This is, I believe, the first experimental verification of this part of the theory.

According to the theory, absorption sets in discontinuously at the series limit with a finite value, which, for a given n_k electron, is proportional to the wave-length of the limit. For very short waves the absorption coefficient is of the form $f(n, k)Z^{2k+2}\lambda^{2+k}$, where Z is the effective nuclear charge and λ the wave-length of the radiation, and where $k = \frac{1}{2}, \frac{3}{2}$ . . . . The values of $f(n, k)$ give atomic absorption coefficients $Z^{\alpha}\lambda^{\beta}$, where α ranges from 3 to 4·5, and where β, for the shortest waves, is 2·5, and for the customary range varies between 2·5 and 3. This is in agreement with the empirical formulæ.

J. R. OPPENHEIMER.

Institut für Theoretische Physik,
Göttingen, October 30.